

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY  
WASHINGTON, D.C. 20460



OFFICE OF CHEMICAL SAFETY AND  
POLLUTION PREVENTION

**MEMORANDUM**

**Date:** September 7, 2018

**SUBJECT:** Alpha-cypermethrin: Review of Developmental neurotoxicity screening study in Wistar rats - Oral administration of the dams and pups (gavage)

**PC Code:** 109702, 209600

**Decision No.:** 540740

**Petition No.:** N/A

**Risk Assessment Type:** Single-chemical  
aggregate

**TXR No.:** 0057776

**MRID No.:** 50572801

**DP Barcode:** D446942

**Registration No.:** Multiple

**Regulatory Action:** Registration Review

**Case No.:** 7464

**CAS No.:** 52315-07-8, 67375-30-8

**40 CFR:** §180.418

**FROM:** Krystle Yozzo, Ph.D., Biologist  
Risk Assessment Branch II (RABII)  
Health Effects Division (7509P)

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**THROUGH:** Christina Swartz, Branch Chief  
Risk Assessment Branch II (RABII)  
Health Effects Division (7509P)

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**TO:** Susan Bartow, Chemical Review Manager  
Linda Arrington, Branch Chief  
Risk Management and Implementation Branch IV  
Pesticide Re-Evaluation Division (7508P)

Catherine Aubee, Branch Chief  
Invertebrate and Vertebrate Branch I  
Registration Division (7505P)

**I. CONCLUSIONS:** The Health Effects Division's (HED) Risk Assessment Branch II (RABII) reviewed the study "Developmental neurotoxicity screening study in Wistar rats - Oral administration of the dams and pups (gavage)" (MRID 50572801). The study was not useful for risk assessment purposes.

**II. ACTION REQUESTED:** RABII was asked to review the study “Developmental neurotoxicity screening study in Wistar rats - Oral administration of the dams and pups (gavage)” (MRID 50572801).

**III. BACKGROUND:** BASF met via conference call with the Agency on March 29, 2018. During this call, BASF informed the Agency of the existence of a non-guideline developmental neurotoxicity (DNT) study conducted by BASF’s European affiliate (Developmental neurotoxicity screening study in Wistar rats - Oral administration of the dams and pups [gavage] [MRID 50572801]). The study design differs from the Agency’s guideline DNT study; however, BASF submitted the study for the Agency’s records.

**IV. RESULTS/DISCUSSION:** RABII screened the study “Developmental neurotoxicity screening study in Wistar rats - Oral administration of the dams and pups (gavage)” (MRID 50572801) The study is not useful for human health risk assessment, and therefore a data evaluation record (DER) has not been completed. The vehicle used in the study is carboxymethylcellulose (CMC) suspension in drinking water. CMC has been found to decrease the absorption rate and lessen the potency and toxicity of pyrethroid compounds. Furthermore, concerns regarding studies on pyrethroid compounds that used CMC as a vehicle are discussed in the published literature and further emphasized in an EPA report released in a July 18, 2007 draft document "assessing approaches for the development of PBPK models for pyrethroid pesticides"<sup>1</sup>. Therefore, the results of this study cannot be used to inform the hazard characterization for the cypermethrins, and cannot be compared to other studies in the toxicology database.

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<sup>1</sup> [https://archive.epa.gov/scipoly/sap/meetings/web/pdf/pyrethroidpbpk\\_sap\\_2007\\_finalv1.pdf](https://archive.epa.gov/scipoly/sap/meetings/web/pdf/pyrethroidpbpk_sap_2007_finalv1.pdf)